**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 99.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Casey, William
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-026513
**Date Inspected:** 11-Oct-2011

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** American Bridge/Fluor Enterprises, a JV

**OSM Arrival Time:** 700
**OSM Departure Time:** 1730
**Location:** Job Site

**CWI Name:** See Below

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|---|---|---|---|---|---|---|---|---|
| **Inspected CWI report:** | ☐ Yes | ☑ No | ☐ N/A | **CWI Present:** | ☑ Yes | ☐ No | |
| **Electrode to specification:** | ☑ Yes | ☐ No | ☐ N/A | **Rod Oven in Use:** | ☑ Yes | ☐ No | ☐ N/A |
| **Qualified Welders:** | ☑ Yes | ☐ No | ☐ N/A | **Weld Procedures Followed:** | ☑ Yes | ☐ No | ☐ N/A |
| **Approved Drawings:** | ☑ Yes | ☐ No | ☐ N/A | **Verified Joint Fit-up:** | ☑ Yes | ☐ No | ☐ N/A |
| | | | | **Approved WPS:** | ☑ Yes | ☐ No | ☐ N/A |
| | | | | **Delayed / Cancelled:** | ☐ Yes | ☑ No | ☐ N/A |

**Bridge No:** 34-0006
**Component:** OBG and Tower

**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the SAS project site and observed the work and the inspection performed by American Bridge/Fluor Enterprises (AB/F) personnel. The inspection was performed as noted below:

A). OBG W12/W13
Piping System (FW Spencer)
QAI: Doug Frey

The QAI, Doug Frey, was assigned to this designated work station to observed the Complete Joint Penetration (CJP) welding and the QC inspection of the field splice identified as 12W-13W-D2. The welding was perfomed utilizing the Sub-Merged Arc Welding (SAW) as per the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1, Rev. 0 and ABF-WPS-D15-3040A-1, Rev. 0 which was utilized by the QC Inspector, William Sherwood, as a reference to monitor the welding, verify the welding parameters, the minmum preheat and maximum interpass temperatures. The QAI, Doug Frey, also observed, monitored the welding and verified the welding parameters.

The QAI, Doug Frey, also observed the welding and the QC inspection of the piping systems identified as the compressed air and domestic water. The CJP welding was performed by Curtis Jump utilizing the WPS identified as 1-12-1, Rev. 2 (1.12) which was also utilized by the QC inspector, Steve Jensen, to monitor and verify the welding parameters.

B). OBG E12/E13
QAI: William Clifford

The QAI, William Clifford, was assigned to this designated work station to observed the Complete Joint Penetration (CJP) welding and the QC inspection of the field splice identified as 12E-13E-D2. The welding was perfomed utilizing the Sub-Merged Arc Welding (SAW) as per the Welding Procedure Specification (WPS) ABF-WPS-D15-4042B-1, Rev. 0 which was utilized by the QC Inspector, Patrick Swain, as a reference to monitor the welding, verify the welding parameters, the minmum preheat and maximum interpass temperatures. The QAI, William Clifford, also observed and monitored the inspection performed by the QC inspector.

The QAI, William Clifford, also observed the Complete Joint Penetration (CJP) groove welding of the field splice identified as 12E-13E-D1and D3. The welding was performed utilizing the Flux Cored Arc Welding w/gas (FCAW-G) as per the Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-1, Rev. 0 which was utilized by the QC Inspector, Patrick Swain, as a reference to monitor the welding, verify the welding parameters, the minmum preheat and maximum interpass temperatures. The QAI, William Clifford, also observed and monitored the inspection performed by the QC inspector.

C). Tower Shear Plates, Elector-Slag Weld (ESW)
QAI: Joselito Lizardo

The QAI, Joselito Lizardo, was assigned to this designated work station to observe the continued excavations, repair welding regarding the Visual Inspection (VT) repairs and Ultrasonic Testing (UT) Repairs. This work was excavation was performed by the welder Jorge Lopez ID-6149. The excavation was performed on the weld joint "G" and identified as WN: S-045. The dimensions of the excavation was reported to this Quality Assurance Lead Inspector (QALI) as follows; Y=4360 mm, L=150 mm, W=28 mm, d=22 mm. The welder Fred Kaddu ID-2188 performed the repair welding on the weld joint designated as "F" and identified as WN: E-045 utilizing the WPS identified as WPS, ABF-WPS-D15-1000 Repair, Rev. 2 and was also utilized by the QC inspector, Bernie Docena, as a reference to monitor the welding, verify the welding parameters and the related work in regards to this operation. The welding was completed during this shift.

Later in the shift, this Quality Assurance Lead Inspector, contacted Structures Representative, Saman Soheilifard, to attain a verbal approval to proceed with the repair welding of the UT reject noted as joint "G" and identified as WN: E-045. Mr. Soheilifard approval was attained.

D). Deck Access Hole (DAH)
Lifting Lug Hole (LLH)
QAI: Craig Hager

The QAI, Craig Hager, was assigned to this designated work station to observed the welding, inspection and testing of the Deck Access Hole (DAH) identified as WN: 8E-PP70.5-E5-NE. The welding and backgouging was performed by, Salvador Sandoval, utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1010, Rev. 1. The QAI, Craig Hager, also observed and monitored the inspection performed by the QC inspector, Fred Von Hoff.

The QAI was also assigned to this designated work station to observed the CJP welding and inspection of the Lifting Lug Holes (LLH) located on the west Orthotropic Box Girders (OBG) identified as WN: 10W-PP92-W4-W2 and W4. The welding was performed by Mike Jiminez ID-4671 utilizing the WPS identified as ABF-WPS-D15-1050A-CU, Rev. 0. The QAI also observed the QC inspector, Sal Merino, perform the visual inspection and verify the welding parameters during the production welding.

QAI Lead Inspector Summary

Later in the shift, this QA Lead Inspector (QALI) also observed the QAI's, Joselito Lizardo, Doug Frey, Craig Hager and William Clifford monitor the work performed by the QC inspectors at random intervals and also observed the QA Inspectors verify the welding parameters, the minimum preheat and the maximum interpass temperatures. The QAI's utilized a Fluke 337 clamp meter to measure the electrical welding parameters, Tempil Heat Indicators and/or a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. At the conclusion of the shift this QA Lead Inspector discussed and reviewed the work performed by QAI's in regards to the various observations and the verifications of the WPS's, consumables, welding parameters, preheat and interpass temperatures as described above. The QAI observations of the QC inspection and verification of the welding parameters performed on this date appeared to comply with the contract specifications with no issues noted on this date. The welding performed at the various work stations were not completed during this shift.

This report was generated upon the discussions with the QA Inspectors, random visual observations and review of the QA field reports.

Review of QA Tracking Plan

This QA Inspector continued the daily review of field inspection reports and update of the field document control tracking records regarding the Orthotropic Box Girders (OBG, Longitudinal and Transverse "A" Deck Stiffeners, Deck Access Holes and the Tower Shear plates. The QAI also updated the tracking records for the pipe welds and the pipe supports.

On this date the QAI commence the review of QA tracking documents for the OBG's identified as E3, E4 and E5.

**Summary of Conversations:**
As noted above.
**Comments**
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

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| **Inspected By:** | Reyes,Danny | Quality Assurance Inspector |
| **Reviewed By:** | Levell,Bill | QA Reviewer |